

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (currently amended) A system for biostimulation [comprising] consisting substantially of:
 - at least one coherent light source of a suitable wavelength;
 - at least one oligomode optical waveguide coupled to said source at a proximal end, wherein said waveguide has a low mode transmission at said wavelength and which may be freely positioned near biological tissue and organisms to be biostimulated; and
 - at least one means to selectively leak irradiation of said wavelength from [at least one preselected position] multiple positions along a length of said waveguide, independent of emission from a distal end, a laterally leaking fiber, so that biological tissue and organisms are caused to be stimulated.
2. (original) The system of claim 1 wherein said means to selectively leak radiation is selected from the group consisting of evanescent wave decouplers, optical gratings, reflective layers, and modifications of said oligomode fiber optic waveguide by laser ablation, chemical etching, ion implantation, and addition of chemical dopants.
- 3.(currently amended) The system of claim 1 wherein said laterally leaking oligomode optical waveguide is a cladded optical fiber.
- 4.(currently amended) The system of claim 1 wherein said laterally leaking oligomode optical waveguide has multiple said means to selectively leak radiation from said multiple positions along a length of laterally leaking waveguide.
5. (currently amended) The system of claim 1 wherein said oligomode optical waveguide has substantially greater than [one] several positions along a length of said waveguide to selectively leak radiation.

6. (currently amended) A method of biostimulation of organic tissue comprising the steps of:

- a) choosing an oligomode transmission fiber having at least one means to selectively leak radiation from at least one preselected position along the length of said fiber, thus providing a laterally leaking fiber;
- b) placing said laterally leaking, oligomode transmission fiber in close proximity to said organic tissue at a plurality desired treatment sites, and wherein said means to selectively leak radiation are positioned so as to align lateral leaks at said desired treatment sites;
- c) activating a coherent light source at a proximal end of said fiber; and
- d) selectively leaking radiation from said source through said at least one means to selectively leak radiation from [at least one preselected position] multiple positions along a length of said fiber independent from emission at a distal end.

7.(currently amended) The method of claim 6 wherein step a is accomplished by choosing a cladded waveguide, which can selectively leak radiation along [its] said length of fiber.

8.(currently amended) The method of claim 6 wherein step d is accomplished by selectively leaking radiation through [at least one] evanescent wave decouplers positioned along [at least one] preselected positions along [a] said length of [said] fiber.

9. (original) The method of claim 6 wherein said irradiation according to step c is continuous.

10. (canceled)

11.(currently amended) The method of claim 6 wherein said biostimulation of organic tissue is for enhanced healing of a large wound, and wherein said steps comprising said method are more specifically:

- a) selecting said laterally leaking oligomode fiber for a chosen wavelength for biostimulation;
- b) placing a length of said laterally leaking oligomode fiber on said wound prior to covering said wound and said fiber with a dressing; and
- c) transmitting light from a coherent light source through said laterally leaking oligomode fiber to deliver biostimulating radiation to said wound.

12.(currently amended) The method of claim 6 wherein said biostimulation of organic tissue is for enhancing seed germination and growth, and wherein said steps comprising said method are more specifically:

- a) selecting said laterally leaking oligomode fiber capable of transmitting a chosen wavelength for biostimulation;
- b) placing said means to selectively leak radiation from said laterally leaking oligomode fiber at a desired planting interval along said fiber;
- c) placing a length of said laterally leaking oligomode fiber along side seeds below grade during planting;
- d) transmitting coherent light from said light source through said laterally leaking oligomode fiber to deliver biostimulating radiation to said seeds.

13.(currently amended) The method of claim 6 wherein said biostimulation of organic tissue is for enhancing animal fertility and growth, and wherein said steps comprising said method are more specifically:

- a) selecting said laterally leaking oligomode fiber capable of transmitting a chosen wavelength for biostimulation;
- b) placing said means to selectively leak radiation from said laterally leaking oligomode fiber at desired intervals along said fiber;
- c) placing a length of said laterally leaking oligomode fiber in association with the floor of an animal storage facility;

d) transmitting coherent light from said coherent light source through said laterally leaking oligomode fiber to deliver biostimulating radiation to animals in said animal storage facility.

14.(currently amended) The method of claim 6 wherein said biostimulation of organic tissue is for enhancing growth of seedlings, wherein said steps comprising said method are more specifically:

- a) assembling a bundle of said laterally leaking oligomode fibers of a length sufficient to traverse a planting area;
- b) locating said bundle of laterally leaking oligomode fibers across said planting area,
- c) directing individual laterally leaking oligomode fibers out of said bundle at desired planting intervals, said individual laterally leaking fibers having said means to selectively leak radiation from said individual oligomode fibers;
- d) placing said lateral leaking individual fiber along with a seedling into the soil; and
- e) transmitting coherent light from a light source through said laterally leaking oligomode fibers to deliver biostimulating radiation to said seedlings.